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We claim:

- 5 1. A compound containing carbodiimide units and carboxyl or carboxylate groups (compound V), derived from
- 10 a) aliphatic or araliphatic C₄ to C₂₀ polyisocyanates (component a)
- 15 b) amino carboxylic acids or amino carboxylic salts (component b) and
- 20 c) if desired, further compounds which carry groups able to react with isocyanate groups in an addition reaction (component c)
- 25 d) if desired, other isocyanates (component d),
- the carbodiimide units deriving essentially exclusively from the isocyanate groups of component (a).
2. A compound (V) as claimed in claim 1, containing from 200 to 2000 mmol/kg of carboxyl or carboxylate groups, based on the weight of the compound.
3. A compound (V) as claimed in claim 1 or 2, wherein component (a) comprises hexamethylene diisocyanate or 1,3-bis(1-methyl-1-isocyanatoethyl)benzene.
4. A compound (V) as claimed in any of claims 1 to 3, wherein the amino carboxylic acids and/or amino carboxylic salts comprise α - or β -amino carboxylic acids, or the Michael adducts of diprimary diamines with α,β -unsaturated carboxylic acids or carboxylic salts.
5. A compound (V) as claimed in any of claims 1 to 4, wherein component (c) comprises aromatic compounds, aliphatic compounds or araliphatic compounds, the araliphatic compounds carrying polyalkylene oxide groups if desired, said compounds having 1 to 20 carbon atoms (not including the carbon atoms of the polyalkylene oxide groups) and having at least one functional group selected from the group consisting of
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secondary amino group, primary amino group and alcoholic hydroxyl group.

- 5 6. A process for preparing a compound (V) as claimed in any of claims 1 to 5, which comprises

Sub
Alcohol
10 I. preparing carbodiimides having terminal isocyanate groups by carbodiimidizing some of the isocyanate groups of component (a), and

II. reacting the isocyanato-terminal compounds prepared in step I with component (b) and, if desired, with components (c) and (d).

- 15 7. A mixture of a compound (V) as claimed in any of claims 1 to 5 and an aqueous dispersion comprising a polymer (P).

- 20 8. A mixture as claimed in claim 7, wherein the polymer (P) carries carboxyl groups.

9. A mixture as claimed in claim 7, wherein polymer (P) comprises a polyurethane (PII) synthesized from

25 IIA) diisocyanates having 4 to 30 carbon atoms,

IIb) diols of which

30 IIB1) from 10 to 100 mol%, based on the total amount of the diols (IIb), have a molecular weight of from 500 to 5000, and

35 IIB2) from 0 to 90 mol%, based on the total amount of the diols (IIb), have a molecular weight of from 60 to 500 g/mol,

40 IIC) monomers different than the monomers (IIa) and (IIb) and containing at least one isocyanate group or at least one isocyanate-reactive group, and further carrying at least one hydrophilic group or potentially hydrophilic group, thereby rendering the polyurethanes dispersible in water,

45 IId) if desired, further polyfunctional compounds different than the monomers (IIa) to (IIC) and having reactive groups which comprise alcoholic hydroxyl groups, primary or secondary

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amino groups or isocyanate groups, and

IIe) if desired, monofunctional compounds different than the monomers (IIa) to (IId) and having a reactive group which comprises an alcoholic hydroxyl group, a primary or secondary amino group or an isocyanate group.

10. A mixture as claimed in claim 7, wherein polymer (P) comprises a polymer (PIII) synthesized from

IIIa) from 30 to 99.9% by weight of principal monomers selected from C₁ to C₂₀ alkyl(meth)acrylates, vinyl esters of carboxylic acids containing up to 20 carbon atoms, vinylaromatic compounds having up to 20 carbon atoms, ethylenically unsaturated nitriles, vinyl halides, and aliphatic hydrocarbons having 2 to 8 carbon atoms and 1 or 2 double bonds,

IIIb) from 0 to 20% by weight of a carboxylic acid having one olefinic double bond, and

IIIc) from 0 to 20% by weight of free-radically polymerizable monomers different than (IIIa) and (IIIb).

11. An article adhesively bonded or coated with a mixture as claimed in any of claims 7 to 9, or a textile impregnated with said mixture.

Carbodiimides with carboxyl or carboxylate groups

Abstract

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Compounds containing carbodiimide units and carboxyl or carboxylate groups (compounds V), derived from

- 10 a) aliphatic or araliphatic C_4 to C_{20} polyisocyanates (component a)
- b) amino carboxylic acids or amino carboxylic salts (component b) and
- 15 c) if desired, further compounds which carry groups able to react with isocyanate groups in an addition reaction (component c)
- d) if desired, other isocyanates (component d),
- 20 the carbodiimide units deriving essentially exclusively from the isocyanate groups of component (a).

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